UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,489	12/15/2003	Xia Zhao	4133-031323 (P-6125)	3805

32182 7590 05/04/2007

DAVID W. HIGHET, VP AND CHIEF IP COUNSEL
BECTON DICKINSON AND COMPANY
[THE WEBB LAW FIRM]
FRANKLIN LAKES, NJ 07414-1880

EXAMINER	
CHORBAJI, MONZER R	
ART UNIT	**PAPER NUMBER**
1744	

MAIL DATE	DELIVERY MODE
05/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/736,489
Filing Date: December 15, 2003
Appellant(s): ZHAO ET AL.

Kirk M. Miles
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on 01/02/2007 appealing from the Office action mailed 04/19/2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

The summary of claimed subject matter contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct. In the advisory dated 07/05/2006, the amendment after final was entered where it was explained to the Applicant that independent claims 1, 17 and 32 as amended will

be rejected under obviousness as independent claim 55 was rejected before. That is Kozimor in view of Applicant Admitted Prior Art.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,231,936	Kozimor et al.	5-2001
4,994,552	Williams et al.	2-1991
6,437,048	Saito et al.	8-2002
6,123,900	Vellutato	9-2000

G.P. Jacobs "The use of gamma-irradiation for the sterilization of water injections and normal saline solution for injection" Acta Pharm. Suec. 14, (1977), pp. 287-292

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-3, 6, 8, 12-13, 16-18, 21-22, 24-25, 28-34, 36-38, 42-43, 46-52, and 54-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kozimor et al (U.S.P.N. 6,231,936) in view of the admitted state of the prior art.

Regarding claims 1, 17, 32 and 55, the Kozimor reference teaches a method for designing radiation stable (col.1, lines 7-10) prefilled syringes (col.8, lines 47-50 and col.4, lines 13-16) that is to be sterilized by gamma irradiation (col.2, lines 36-39, col.4, lines 10-15, col.10, lines 31-46 and col.9, lines 6-8). The prefilled syringes include polyolefin material and a radiation stabilizer (col.7, lines 14-17). In addition, Kozimor teaches a radiation stable (col.1, lines 7-10) container that is to be sterilized by gamma

irradiation (col.2, lines 36-39, col.4, lines 10-15, col.10, lines 31-46 and col.9, lines 6-8) after being filled by a medium. The Kozimor reference fails to teach a recognition that the medium includes less than about 3.4 ppm of oxidizable substances after the irradiation step. The Admitted Prior Art (specification on page 2, lines 10-14) teaches that the European and/or US Pharmacopoeia requirements include absorbance levels below 0.2 at 220-340 nm and the presence of hydrogen peroxide and other oxidizing agents is required to be below 3.4ppm after the process of irradiation. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to perform the method of the Kozimor reference such that the medium includes less than about 3.4 ppm of oxidizable substances after radiation sterilization in order to comply with the European and/or U.S. Pharmacopoeia guidelines as taught in the Admitted Prior Art.

Regarding claims 2-3, 21-22, 33-34 and 36-37, the Kozimor reference discloses a therapeutic drug in a container (col.8, lines 47-49) for injection into the body where the container is a bag (col.8, lines 65-67) or a syringe (col.8, line 48).

Regarding claims 8,12-13, 25, 28-29, 38, 42-43 and 46-51, the Kozimor reference teaches a container manufactured from polypropylene (col.5, lines 43-44) that includes an additional polymer at, for example, 8 weight percent (col.4, lines 42-43).

Regarding claims 30-31, the Kozimor reference discloses a therapeutic drug in a container (col.8, lines 47-49) for injection into the body where the container is a bag (col.8, lines 65-67) or a syringe (col.8, line 48).

Regarding claims 16, 18 and 24, the Kozimor reference teaches irradiating with gamma radiation at doses of 2.5, 5.0, 7.5 (col.4, lines 23-27) and up to 10 Mrad (col.4, lines 22-23, for example, 10 Mrad is equal to 100 KGy) and also teaches irradiating prefilled syringes (col.8, lines 47-49) such that irradiating prefilled syringes necessarily means syringes that have already been sealed prior to irradiation step.

Regarding claims 6, 52, 54 and 56, the Kozimor reference fails to teach placing medium irradiation limitations on ultraviolet absorbance at certain wavelength range values and on the concentration of hydrogen peroxide. However, as set forth above, the Admitted Prior Art teaches that the required UV absorbance level is below 0.2 at 220-340 nm and the presence of hydrogen peroxide and other oxidizing agents should be below 3.4ppm after the process of irradiation, according to European and/or US Pharmacopoeia requirements. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to perform the method of the Kozimor reference with limits on UV absorbance values and on hydrogen peroxide values in order to comply with the European and/or U.S. Pharmacopoeia guidelines as taught by the Admitted Prior Art.

Claims 4-5, 23 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kozimor et al (U.S.P.N. 6,231,936) in view of the admitted state of the prior art as applied to claims 2, 1, 17, 32 respectively and further in view of Jacobs et al (Acta Pharm, IDS).

Regarding claims 4-5, 23 and 35, both Kozimor and the admitted state of the prior art fail to teach saline water as the medium and the pH of the medium after

irradiation between about 4.5 and about 7.0; however, the Jacobs reference teaches gamma irradiation of saline water (table 1) and, for example a pH of 5.0 for saline water after gamma irradiation (table 2). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to perform the method of the Kozimor reference by irradiating saline water as taught by the Jacobs reference since saline water is used for injections (abstract).

Claims 9, 14-15, 26, 39 and 44-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kozimor et al (U.S.P.N. 6,231,936) in view of the admitted state of the prior art as applied to claims 8, 25 and 38 and further in view of Williams et al (U.S.P.N. 4,994,552).

Regarding claims 9, 14-15, 26, 39 and 44-45, both Kozimor and the admitted state of the prior art fail to teach the following: the composition of the container includes a clarifying agent such as dibenzylidene sorbitol alkyl thioether with a clarifying amount, a mobilizing additive such as a hydrocarbon oil and the stabilizer is bis (4-piperidinyl) diester of a dicarboxylic acid. The Williams reference teaches the following: the composition of the container includes a clarifying agent such as dibenzylidene sorbitol alkyl thioether with a clarifying amount (col.8, lines 45-47), a mobilizing additive such as a hydrocarbon oil (col.2, lines 43-44) and the stabilizer is bis (4-piperidinyl) diester of a dicarboxylic acid (col.4, lines 59-61). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to perform the method of the Kozimor reference by including a clarifying agent, a mobilizing additive and a stabilizer as the medium as taught by the Williams reference since they produce a polymeric

composition of high clarity which may be radiation sterilized without degradation of its mechanical properties due to radiation (col.2, lines 30-32).

Claims 10-11, 27 and 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kozimor et al (U.S.P.N. 6,231,936) in view of the admitted state of the prior art as applied to claims 8, 25 and 38 and further in view of Saito et al (U.S.P.N. 6,437,048).

Regarding claims 10-11, 27 and 40-41, both Kozimor and the admitted state of the prior art fail to teach including a nucleating agent such as 2,2'-methylene-bis (4,6-di-t-butylphenol) phosphate salt; however, the Saito reference, which is in the art of designing medical articles made of polyolefin material, teaches the use of aluminum 2,2'-methylene-bis (4,6-di-t-butylphenol) phosphate (col.29, lines 23-25). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to perform the method of the Kozimor reference by including a nucleating agent in the medium as shown by the Saito reference in order to ensure excellent glossiness and reflection of the obtained olefin article (col.28, lines 34-36).

Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kozimor et al (U.S.P.N. 6,231,936) in view of the admitted state of the prior art as applied to claim 18 and further in view of Vellutato (U.S.P.N. 6,123,900).

Regarding claim 19, the Kozimor reference teaches that prefilled syringes containing a drug will be packaged for delivery (col.8, lines 47-48), but both Kozimor and the admitted state of the prior art fail to explicitly teach irradiating packaged containers. The Vellutato reference teaches irradiating pharmaceutical compositions

after being packaged inside a carton with gamma radiation (col.3, lines 1-9, col.4, lines 50-52 and col.5, lines 1-5). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to perform the method of the Kozimor reference by gamma irradiating an already packaged container as taught by the Vellutato reference since Gamma radiation has a high penetration capability (col.5, lines 22-26).

Regarding claim 20, the Kozimor reference teaches that the packaging includes blister packing (col.8, lines 19-20).

(10) Response to Argument

I. Obviousness rejection of Kozimor In view of The Admitted State of The Prior Art.

1. On pages 13-14 of the brief, Appellant argues that Kozimor fails to realize that the contents of the container are affected based on whether the container is filled or unfilled prior to gamma radiation, that Kozimor does not teach whether the prefilling of the container prior to gamma radiation will have any effect on the medium within the container, that Kozimor would not lead to one skilled in the art to recognize that prefilling the container prior to gamma irradiation would result in maintaining the concentration of the oxidizable substances to below 3.4 ppm and that Kozimor alternative teaching of filling the container before or after gamma radiation does not provide reasonable expectation that prefilling the container prior to gamma radiation results in reducing oxidizing agents when compared with irradiating empty container then filling it.

Kozimor gamma irradiates prefilled containers. The inherent results achieved by performing the steps of prefilling containers then performing gamma irradiation need not be recognized by the inventors of the reference (MPEP, 2112, II). More particularly, the fact that prefilling then irradiating would result in the benefit of maintaining oxidizable agents below a certain threshold needs not be recognized by the inventors of the reference as long as the claimed subject matter is taught by the reference. There are only two methods available to one skilled in the art to follow guided by Kozimor's teachings; that is either to pre-fill then irradiate or to irradiate then fill. Kozimor leaves the question of choosing either method to the artisan. On page 2 of the specification, Appellant teaches that gamma causes damage to the container and to its contents. In this case, obviousness is based on Kozimor invention of the Admitted Prior Art, which states that there are known Pharmacopoeia standards, which those of ordinary skill in the art would readily recognize are required to be met in order to provide products to consumers.

On page 14 of the brief, Appellant argues that the examiner fails to explain how upon reading both Kozimor and the Pharmacopoeia the benefit of maintaining the concentration of oxidizable substances to below 3.4 ppm after gamma radiation is achieved by prefilling the container.

Applicant's specification does not require additional steps in order to realize the benefit of maintaining oxidizable agents below the claimed threshold. The disclosure teaches filling then irradiating would result in maintaining the concentration of oxidizable substances to below 3.4 ppm without providing the later advantage for doing the two

steps. The fact that prefilling then irradiating would result in the benefit of maintaining oxidizable agents below a certain threshold needs not be recognized by the inventors of the Kozimor reference as long as the claimed subject matter is taught by the reference. Then, obviousness is based on Kozimor invention of the Admitted Prior Art, which states that there are known Pharmacopoeia standards, which those of ordinary skill in the art would readily recognize are required to be met in order to provide products to consumers.

2. On page 15 of the brief, Appellant argues that Kozimor fails to recognize the advantages associated with prefilling the containers then gamma irradiating them versus irradiating them then filling them and that Pharmacopoeia standards are met with prefilling then irradiating.

As explained above, the inherent result of the method in Kozimor prefilling containers then performing gamma irradiation need not be recognized by the inventors of the reference (MPEP, 2112, II). Kozimor's method of prefilling then irradiating would necessarily result in the benefit of maintaining oxidizable agents below the claimed threshold (pharmacopoeia requirement). It is noted that Applicant's own invention does not require additional steps in order to realize the benefit of maintaining oxidizable agents below the claimed threshold. Therefore, one of ordinary skilled in the art performing the method in Kozimor would readily recognize the necessity to maintain the levels below the requirement of industry standards.

3. On pages 15-17 of the brief, Appellant argues that prefilling then irradiating results in reducing oxidizable species which is an unexpected result as

provided in Appellant's examples 3 and 4 in the disclosure, that the examiner has failed to show such unexpected finding as based on the submitted art and that gamma radiation has an effect on the amount of oxidizable materials in the contents of prefilled containers.

As set forth above, the performance of the method steps in Kozimor would result in the maintenance of oxidizing agents below the claimed threshold. Thus, what naturally occurs cannot be considered unexpected.

Applicant's arguments with respect to the dependent claims are directed only to the same arguments with respect to Kozimor in view of the Admitted Prior Art, which have all been discussed and responded to above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

GLADYS JP CORCORAN
SUPERVISORY PATENT EXAMINER

Monzer R. Chorbaji MRC
AU 1744
04/19/2007

Conferees:

Gladys Corcoran

JENNIFER MICHENER
QUALITY ASSURANCE SPECIALIST

Jennifer K. Michener

Kirk M. Miles
The Webb Law Firm
700 Koppers Building, 436 Seventh Avenue
Pittsburgh, Pennsylvania 15219